

Catalogue of American Amphibians and Reptiles.

Watkins-Colwell, G.J., H.M. Smith, and D. Chiszar.
2006. *Sceloporus scalaris*.

***Sceloporus scalaris* Wiegmann**
Light-bellied Bunchgrass Lizard

Sceloporus scalaris Wiegmann 1828:370. Type-locality "Mexico," restricted to "Mexico, Distrito Federal" by Smith and Taylor (1950a,b). Syntypes, Univ. Humboldt Zool. Mus., Berlin (ZMB) 654–656 (4 specimens, *fide* Taylor 1969), collected by F. Deppe, date unknown (not examined by authors).

Tropidolepis scalaris: Gray 1831:44.

• **CONTENT.** Three subspecies are currently recognized: *S. s. scalaris*, *S. s. brownorum* and *S. s. unicanthalis* (see Smith et al. 1996).

• **DESCRIPTION.** A member of the *scalaris* group of *Sceloporus*, having a combination of parallel lateral scale rows (except in *S. goldmani*), with rare exception two postrostral scales, femoral pores series of the two sides in contact or separated by no more than 2 scales, males with lateral abdominal color patches (semeions), and females lacking preanal keels.

Maximum SVL 78 mm; head scales rugose or keeled; internasals small, the row on each side of midline between frontonasals and postrostrals almost always 2 or 3, rarely 1 or 4; usually two frontonasals and three prefrontals; frontal divided, contacting interparietal; 4–5 supraoculars, bordered medially by a circumorbital row of small scales, and laterally by 1–3 rows of small scales separating supraoculars from superciliaries; a large subnasal; canthals 2 (except in *S. s. unicanthalis*, with 1); loreals usually 1 or 2; preoculars usually 2, occasionally 3, rarely 1 or 4; 1 or 2 rows of scales between subocular and supralabials; two pairs of postmentals, the posterior pair in contact or separated by 1–3 scales. Dorsals 39–49; femoral pores 12–19 on each side; no postfemoral dermal pocket.

Dorsum and sides brown; a narrow dorsolateral light line on each side beginning at the corner of the eye and extending onto the tail, bordered on both sides by a series of dark brown, serrate chevrons, each often bordered posteriorly by a fine white line; ventral surface of head with dark bars varying in intensity; female venter unmarked, whitish; male venter with a long blue patch on each side, either widely separated or in contact, interrupted at intervals by dark transverse bars or streaks. A patternless morph seldom occurs in *S. s. scalaris* (always in males), in 20–40% of *S. s. brownorum* (always in females), and in 20% of *S. s. unicanthalis* (rarely in females).

• **DIAGNOSIS.** Eight species belong to the *scalaris* group: *S. aeneus* Wiegmann 1828, *S. bicanthalis* Smith 1937, *S. chaneysi* Liner and Dixon 1992, *S. goldmani* Smith 1937, *S. samcolemani* Smith and Hall 1974, *S. scalaris* Wiegmann 1828, *S. slevini*



Figure 1. Gravid female *S. scalaris* from the vicinity of Lagunas de Zempola, Mexico D.F., courtesy of Michael Price.

Smith 1937, and *S. subpictus* Poglayen and Smith 1958. All are monotypic except for *S. scalaris*, and all except *S. bicanthalis* and *S. goldmani* are oviparous. *S. scalaris* differs from *S. goldmani* in having lateral scale rows parallel (vs. diagonal), dorsals 39–49 (vs. 50–55), and in oviparity (vs. viviparity); from *S. bicanthalis* in being mostly light ventrally in males (vs. mostly black), and oviparity (vs. viviparity); and from all other species of the group in having two canthals (vs. one), except in *S. s. unicanthalis*, and blue abdominal semeions, never melanized, in males (vs. red, orange, or strongly melanized).

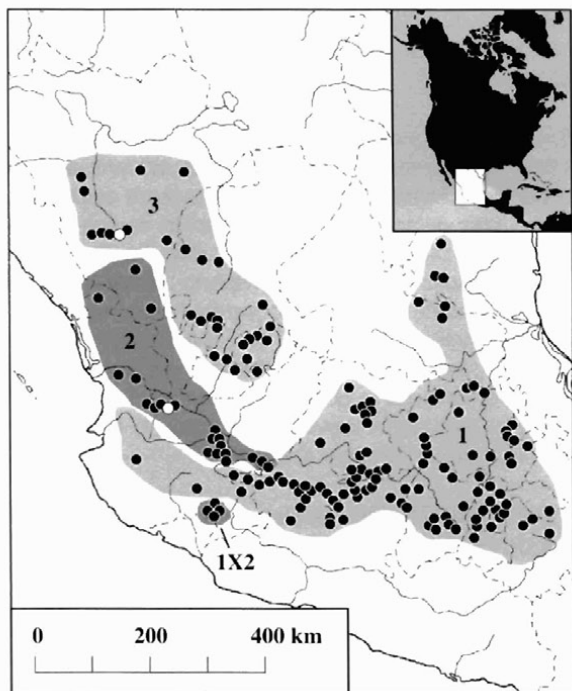
• **DESCRIPTIONS.** Boulenger 1897, Duméril and Bibron 1837, Duméril et al. 1909, Gray 1845, Günther 1890, Smith 1939, Smith et al. 1997, Thomas and Dixon 1976, and Wiegmann 1828, 1834 provided descriptions and variational data.

• **ILLUSTRATIONS.** Black-and-white drawings appear in Duméril et al. 1909 and Wiegmann 1834. Black-and-white photographs are in Liner and Dixon 1992, Smith 1939, and Smith et al. 1997. A drawing of the skull is in Larsen and Tanner 1974. Photomicrographs of scales appear in Burstein et al. 1974. Wiens and Reeder 1997 illustrated the male semeion. Hall (1973) illustrated the karyotype.

• **DISTRIBUTION.** The general range of *S. scalaris* is in the transvolcanic belt at the southern edge of the Central Plateau of Mexico, from northern Guanajuato southward to northern Puebla and central Michoacán, and northward along the Sierra Madre Occidental to central Durango, and along the Sierra Madre Oriental to southwestern Tamaulipas. Although the species can be found in high grassy plains, it is often regarded as a montane species (ca. 2439–2896 m) and is considered part of the pine-oak woodland assemblage (McCrane and Wilson 1987). The species is often associated with grass tufts which are used for refugia. The range of *S. s. scalaris* encompasses all of the eastern and southern parts of the range of the species. *S. s. brownorum* occurs on the eastern slopes of the Sierra Madre Occidental from

central Durango southeastward through southern Zatecas and extreme northern Jalisco to central Aguascalientes. The range of *S. s. unicanthalis* lies between those of the other two subspecies, mostly on the west slope of the Sierra Madre Oriental in extreme southern Durango southward to the northern edge of Lake Chapala.

Easily recognized intergrades between *S. scalaris* and *S. s. unicanthalis* are known to occur (Smith et al. 1997), but as yet none are recorded between *S. s. brownorum* and *S. s. unicanthalis*. The latter and *S. s. scalaris* appear to be completely isolated from each other, but the intervening region of northeastern Jalisco appears to have been little collected.



Map. Distribution of *Sceloporus scalaris*. The X indicates the location of an isolated intergrade population between *S. s. scalaris* and *S. s. unicanthalis*.

The species has been recorded erroneously, through misidentification and/or incorrect locality data as follows: **Cuba** (Müller 1878), **Baja California** (Baird 1860 [1859]), **Campeche** (Velasco 1895), **Chiapas** (Velasco 1898), **Colima** (Duméril et al. 1909), **Guerrero** (Velasco 1892a), **Nuevo León** (Cope 1887, Dunn 1936), **Sierra de Oaxaca** (Sumichrast 1882, Velasco 1891a), **Matamoros and Tamaulipas** (Altini 1942), **Tlaxcala** (Velasco 1892b), **Cozumel Island, Quintana Roo** (Cope 1885), **Sonora** (Baird 1859), **Orizaba** (Sumichrast 1882), **Veracruz, Mexico and San Antonio and San Diego, Texas** (Hallowell 1857 [1856], and Cope 1888, 1900, corrected by Stejneger 1891). The record for Hda. del Hobo (Boulenger 1885) or Hda. del Bobo (Boulenger 1897) is of uncertain location. Many references using the name *scalaris* (e.g. Van Denburgh 1922) pertain to *S. slevini* or *S. samcolemani*.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** The literature analysis that follows pertains to the species we now understand as *S. scalaris*, although erroneous application of the name to other taxa has sometimes made it difficult to be sure: **anatomy and morphology** (Álvarez and González 1987, Baker 1895, Fitch 1978, 1981, Etheridge 1964, Galindo y V. 1927, Hernández and Flores 1985, Larson and Tanner 1974, 1975, Moody 1983, Olson et al. 1986, 1987, Ortega et al. 1996, Peters 1967, Smith 1975, and Smith et al. 1982); **behavior**: (Carpenter 1978a,b, 1986, Ferguson 1977, Gutiérrez and Ortega 1986, Martins 1993, Ortega and Hernández 1983, and Purdue and Carpenter 1972a,b); **bibliographies, checklists, and similar compendia** (Bell et al. 2003, Camarillo-R. and Smith 1992, Cochran 1961, Deppe 1830, Dugès 1870, 1877, Duméril and Duméril 1851, Echegoyen 2005, Elter 1982, Ferrari-Pérez 1886, Fitzinger 1843, Flores et al. 1991, 1995, Flores-Villela 1993, Frank and Ramus 1995, García C. 1884, Garman 1887, Gravenhorst 1837, Herrera 1895, 1899, 1904, Hutchins et al. 2003, Jan 1857, Köhler and Heimes 2002, Lichtenstein 1856, Marx 1958, 1976, McCranie and Wilson 1990, Mendez-de la Cruz et al. 1992, Müller 1884, Rodríguez-Robles et al. 2003, Shannon 1951, Smith 1934a,b, 1938, 1971, 1985, 1987, Smith and Smith 1975, 1976, 1993, Sokolov 1988, Stejneger 1904, Taylor 1944, 1969, Westphal-Castelnau 1872, and Yarow 1882); **biogeography and distribution** (Baird 1859, Camarillo 1989, 1990b, Castro and Aranda 1985, Cope 1896, Davis and Smith 1953, Dixon et al. 1972, Duellman 1961, Dugès 1888, 1896, Duméril et al. 1909, Flores Villela 1991, Gadow 1905, González et al. 1985, Grant and Smith 1960, Hallowell 1857 [1856], 1861 [1860], Herrera 1890, 1891a, Ives 1892 [1891], Lara-Góngora 1982, Maldonado Koerdell 1953, Martín 1958, Martín del Campo 1940, McCranie and Wilson 1987, 2001, Mendoza Quijano 1990, Mendoza Quijano et al. 1989, Morafka 1977, Müller 1865, Pérez V. and Reyna T. 1978, Peters 1870 [1869] and 1870, Petersen 1980, Poglayan and Smith 1958, Ramirez-Bautista et al. 1991, Smith and Lafe 1945, Sumichrast 1873, Velasco 1890a-d, 1891a,b, 1893, 1894, 1896a,b, Watkins-Colwell et al. 1996, Webb 1984, and Wilson and McCranie 1979); **conservation** (Flores and Gérez F. 1988, 1994, González et al. 1986, Hernández 2004a-d, and Nilsson 1983); **ecology and natural history** (Campbell 1979, Castro-Franco and Bustos Zagal 1994, 2003, Duellman 1965, Gadow 1910, Gutiérrez and Ortega 1986, Heatwole and Taylor 1987, Herrel et al. 2002, Herrera 1891b, Herrera and Vergara L. 1899, Hiraldo et al. 1991, Ortega and Gutiérrez 1987, Ortega et al. 1982, 1984, and Ramirez et al. 2000); **karyology** (Cole 1978, Gilboa 1975, Grassé 1970, Hall 1971, and Hall and Williams 1976); **parasitology** (Ayala 1978, Peláez et al. 1948, and Thompson and Huff 1944); **phylogeny and systematics** (Ashton and Feldman 2003, Cox et al. 2003, Creer et al. 1997, de Queiroz and Ashton 2004, Guillelte and Smith 1985, Harmon et al. 2003, Lang 1989, Reeder 1995, Reeder and Wiens 1996, Sites et al. 1992, E.N. Smith 2001, Smith 1936, 1939, 1974, Smith et al. 2000,

Warheit et al. 1999, Wiens 1993, 1999, 2000, and Wiens and Reeder 1997); **physiology** (Ortega et al. 1987, 1996, Ortega and Gallina 1987, Ortega et al. 1998, and Pough 1973); **reproduction** (America and Ortega 1986, Benabib et al. 1997, Blackburn 1982, Camarillo 1990a, Fitch 1985, García and Ortega 1983, Godínez 1985, Guillelte 1981, Guillelte et al. 1980, Méndez de la Cruz and Villagran 1983, Méndez de la Cruz et al. 1998, Mink and Sites 1996, Ortega and Barbault 1986, Pilorge and Barbault 1981, Shine 1985, and Smith and Hall 1974).

• **ETYMOLOGY.** The name *scalaris* (Latin, of or belonging to a flight of steps or a ladder) refers to the ladder-like dorsal pattern. The name *brownorum* honors Dr. Bryce C. Brown and his wife and children, all of whom aided in the collection of the largest series of this subspecies. The name *unicanthalis* refers to the presence of a single rather than a double canthal that occurs in all other conspecifics.

1. *Sceloporus scalaris scalaris* Wiegmann. Highlands Bunch Grass Lizard

Sceloporus scalaris Wiegmann 1828:370. See species synonymy.

Sceloporus scalaris scalaris: Smith 1937:2 (part).

• **DESCRIPTION.** A subspecies of *Sceloporus scalaris* with two canthals (95%); one or both lateral frontonasals separated from median one, or all irregular in number and arrangement (in 27% of specimens examined); second pair of postmentals in contact, or separated by a single scale (in 27% of specimens examined); gular bars well developed in adult males, variable in females (absent in some, weakly developed in most, well developed in some); lateral abdominal semeions in adult males in contact or rarely separated by more than 4 scales.

2. *Sceloporus scalaris brownorum* Smith, Watkins-Colwell, Lemos-Espinal, and Chiszar. Brown's Bunchgrass Lizard

Sceloporus scalaris scalaris: Smith 1937:2 (part).

Sceloporus scalaris: Thomas and Dixon 1976:523 (part).

Sceloporus scalaris brownorum Smith, Watkins-Colwell, Lemos-Espinal, and Chiszar 1997:290. Type-locality, "22 mi NE El Salto, Durango, Mexico". Holotype, Strecker Museum, Baylor University (SMBU) 22730 (formerly 11847 in the B.C. Brown private collection), an adult male, collected by B.C. Brown, L.D. Brown, A.A. Brown, B.A. Brown, R.B. Brown, E. Mitchell, and J. Wottring, 6 June 1961.

• **DESCRIPTION.** A subspecies of *Sceloporus scalaris* with two canthals (98%); one or both lateral frontonasals separated from medial one, or all irregular in number or arrangement (in 24% of specimens exam-

ined); second pair of postmentals in contact, or separated by a single scale (in 10% of specimens examined); gular bars weak or absent in adult males, absent in adult females; lateral abdominal semeions separated by 7–14 scales, with rare exceptions.

3. *Sceloporus scalaris unicanthalis* Smith Southwestern Bunchgrass Lizard

Sceloporus scalaris unicanthalis Smith 1937:4. Type-locality "Magdalena, Jalisco, [México]". Holotype, Field Museum of Natural History (FMNH) 100101 (Marx 1976; formerly 7699 in the E.H. Taylor private collection), age and sex unspecified, collected by H.M. Smith 30 June 1935.

• **DESCRIPTION.** A subspecies of *S. scalaris* with one canthal (100% of specimens examined, excluding intergrades); one or both lateral frontonasals separated from median frontonasal, or all irregular in number and arrangement (84% of specimens examined); second pair of postmentals in contact, or separated by a single scale (72% of specimens examined); gular bars well developed in adult males, variable in females (absent in some, weakly developed in most, well developed in some); lateral abdominal semeions in adult males in contact or rarely separated by more than 4 scales.

• **COMMENT.** Species content and parity type among members of the *scalaris* group have long been contentious. The situation is now considerably improved. Thomas and Dixon (1976) regarded *S. scalaris* as monotypic, but to a considerable extent due to the absence of a clear characterization of the double canthal condition. Subsequent clarification (Smith et al. 1997) and refinement of distributional patterns have greatly enhanced understanding of the taxonomic parameters within *S. scalaris* as well as within the entire group. Although we regard the taxonomic arrangement here presented as fundamentally sound for *S. scalaris*, distribution and intergrade zones merit further attention.

The status of the population in southern Tamaulipas deviates from norms for *S.s. scalaris* in several ways, as noted by Smith et al. (1997:299). The specimens (28) are small, with 50% of individuals examined exceeding 50 mm with a maximum SVL 60 mm, vs. 61% exceeding 50 mm with a maximum SVL 76 mm in other populations. There are 1–1 complete rows of scales between the subocular and supralabials in 89% of Tamaulipas material vs. 36% elsewhere. Where there is but one row complete, only one scale makes the double contact in 13% (vs. 71% in other *S. s. scalaris*). Possible distinctions in pattern and color have not been explored; this population may be taxonomically distinct.

• **ACKNOWLEDGMENTS.** We are much indebted to E.A. Liner for bibliographic aid and provision of locality data from specimens in his personal collection (now at the American Museum of Natural History).

LITERATURE CITED

- Altini, G. 1942. I rettili dei Laghi Chapala, Patzcuaro e Peten raccolti nel 1932 dal Prof. Alessandro Ghigi e dal Prof. Alula Taibel. Atti Soc. Ital. Sci. Nat., Milan 81:153-195.
- Alvarez Solórzano, T. and M. González E. 1987. Atlas cultural de México. Inst. Nac. Antropol. Hist., México, D.F.
- America, G. and A. Ortega. 1986. Mating behaviour of the mountain lizard *Sceloporus scalaris*. Bull. Maryland Herpetol. Soc. 22:23-25.
- Ashton, K.G. and C.R. Feldman. 2003. Bergmann's Rule in nonavian reptiles: turtles follow it, lizards and snakes reverse it. Evolution 57:1151-1163.
- Ayala, S.C. 1978. Checklist, host index, and annotated bibliography of *Plasmodium* from reptiles. J. Protozool. 25:87-100.
- Baird, S.F. 1859. Reptiles of the Boundary, with notes by the naturalists of the Survey. In W.H. Emory, Report on the United States and Mexican Boundary Survey, made under the direction of the Secretary of the Interior. House Rep. Exec. Doc. No. 135, 34th Congr., 1st Sess., 2(2):1-35, pl. I-XLI.
- . 1860 (1859). Notes on a collection of birds made by Mr. John Xantus, at Cape St. Lucas, Lower California and now in the Museum of the Smithsonian Institution. Proc. Acad. Nat. Sci. Philadelphia 11:299-306.
- Baker, F.C. 1895. A Naturalist in Mexico, being a Visit to Cuba, northern Yucatán and México. D. Oliphant, Chicago.
- Bell, E.L., H.M. Smith, and D. Chiszar. 2003. An annotated list of the species-group names applied to the lizard genus *Sceloporus*. Acta Zool. Mex. (n.s.) 90:103-174.
- Benabib, M., K.M. Kjer, and J.W. Sites, Jr. 1997. Mitochondrial DNA sequence-based phylogeny and the evolution of viviparity in the *Sceloporus scalaris* group (Reptilia, Squamata). Evolution 51:1262-1275.
- Blackburn, D.G. 1982. Evolutionary origins of viviparity in the Reptilia. I. Sauria. Amphib.-Rept. 3:185-205.
- Boulenger, G.A. 1885. Catalogue of the lizards in the British Museum (Natural History). 2nd ed., Vol. 2. Trustees of the British Museum (Nat. Hist.), London.
- . 1897. A revision of the lizards of the genus *Sceloporus*. Proc. Zool. Soc. Lond. 1897:474-522, 1 pl.
- Burstein, N., K.R. Larsen, and H.M. Smith. 1974. A preliminary survey of dermatoglyphic variation in the lizard genus *Sceloporus*. J. Herpetol. 8:359-369.
- Camarillo R., J.L. 1989. Estudio de la fauna herpetológica del Parque Nacional "El Chico," Hgo. Mem. VI Simp. Fauna Silvestre, UNAM:50-58.
- . 1990a. Relationship between reproductive modality and elevational distribution of the *Sceloporus aeneus* complex (Sauria: Iguanidae) in the state of México, Mexico. Bull. Maryland Herpetol. Soc. 26:39-54.
- . 1990b. Anfíbios y reptiles del Valle de México: diversidad, estado actual y conservación. Simp. Intern. Vida Silv. 2:330-345.
- . and H.M. Smith. 1992. A handlist of the amphibians and reptiles of the state of Mexico, Mexico, p. 39-41. In P.D. and J.L. Strimple (eds.), Contributions in Herpetology. Greater Cincinnati Herpetol. Soc., Cincinnati, Ohio.
- Campbell, J.A. 1979. *Crotalus scutulatus* (Viperidae) in Jalisco, Mexico. Southwest. Nat. 24:693-694.
- Carpenter, C.C. 1978a. Ritualistic social behaviors in lizards, p. 253-267. In N.B. Greenberg and P.D. MacLean (eds.), Behavior and neurology of lizards: an interdisciplinary colloquium. U.S. DHEW Publ. No. (ADM) 77-491.
- . 1978b. Comparative display behavior in the genus *Sceloporus* (Iguanidae). Contrib. Biol. Geol. Milwaukee Pub. Mus. (18):1-71.
- . 1986. An inventory of the display-action-patterns in lizards. Smithson. Herpetol. Info. Serv. (68):1-18.
- Castro F., R. and E. Aranda E. 1985. Distribución ecológica de las lagartijas en el estado de Morelos. Res. Oct. Congr. Nac. Zool.:208.
- . and M.G. Bustos Zagal. 1994. List of reptiles of Morelos, Mexico, and their distribution in relation to vegetation types. Southwest. Nat. 39:171-175.
- . and -. 2003. Lagartijas de Morelos, México: distribución, habitat y conservación. Acta Zool. Mex. (n.s.) 88:123-142.
- Cochran, D.M. 1961. Type specimens of reptiles and amphibians in the U.S. National Museum. Bull. U.S. Natl. Mus. (220):xv + 291 p.
- Cole, C.J. 1978. Karyotypes and systematics of the lizards in the *variabilis*, *jalapae*, and *scalaris* species groups of the genus *Sceloporus*. Amer. Mus. Novitates (2653):1-13.
- Cope, E.D. 1885. A contribution to the herpetology of Mexico. VI. A synopsis of the Mexican species of the genus *Sceloporus* Wieg. Proc. Am. Philos. Soc. 22:393-403.
- . 1887. Catalogue of batrachians and reptiles of Central America and Mexico. Bull. U.S. Natl. Mus. (32):1-98.
- . 1888. Catalogue of the Batrachia and Reptilia brought by William Taylor from San Diego, Texas. Proc. U.S. Natl. Mus. 11:395-398.
- . 1896. The geographical distribution of Batrachia and Reptilia in North America. VIII. The Toltecán subregion. Am. Nat. 30:1020-1025.
- . 1900. The crocodilians, lizards, and snakes of North America. Ann. Rept. U.S. Natl. Mus. 1898:153-1270, 36 pl.
- Cox, R.M., S.L. Skelly, and H.B. John-Alder. 2003. A comparative test of adaptive hypotheses for sexual size dimorphism in lizards. Evolution 57:1653-1669.
- Creer, D.A., K.M. Kjer, D.L. Simmons, and J.W. Sites, Jr. 1997. Phylogenetic relationships of the *Sceloporus scalaris* species group (Squamata). J. Herpetol. 31:353-364.
- Davis, W.B. and H.M. Smith. 1953. Lizards and turtles of the Mexican state of Morelos. Herpetologica 9:100-108.
- de Queiroz, A. and K.G. Ashton. 2004. The phyloge-

- ny of a species-level tendency: species heritability and possible deep origins of Bergmann's Rule in tetrapods. *Evolution* 58:1674-1684.
- Deppe, W. 1830. Preis-Verzeichniss der Säugetiere, Vögel, Amphibien, Fische und Krebse, welche von den Herren Deppe und Schiede in Mexico gesammelt worden, und bei dem unterzeichneten bevollmächtigten in Berlin gegen baare Zahlung in Preuss. Courant zu erhalten sind. Berlin, Privately Printed. 3 p.
- Dixon, J.R., C.A. Ketchersid, and C.S. Lieb. 1972. The herpetofauna of Querétaro, Mexico, with remarks on taxonomic problems. *Southwest. Nat.* 16:225-237.
- Duellman, W.E. 1961. The amphibians and reptiles of Michoacán, Mexico. *Univ. Kansas Publ. Mus. Nat. Hist.* 15:1-148.
- . 1965. A biogeographic account of the herpetofauna of Michoacán, Mexico. *Univ. Kansas Publ. Mus. Nat. Hist.* 15:627-709.
- Dugès, A.A.D. 1870. Una nueva especie de ajolote de la Laguna de Pátzcuaro. *Naturaleza* 1:241-244.
- . 1877. Una nueva especie de saurio. *Naturaleza* 4: 29-34.
- . 1888. Erpetología del Valle de México. *Naturaleza* (2)1:97-146.
- . 1896. Reptiles y batracios de Los Estados Unidos Mexicanos. *Naturaleza* (2)2:479-485.
- Duméril, A.M.C. and G. Bibron. 1837. *Erpétologie Générale ou Histoire Naturelle Complète des Reptiles*. Tome Quatrième. Lib. Encyc. Roret, Paris.
- Duméril, A.H.A., M.-F. Bocourt, and F. Mocquard. 1909. Études sur les reptiles, p. 202-205. In *Mission Scientifique au Mexique et dans l'Amérique Centrale. Recherches Zoologiques pour servir à l'histoire de la Faune de l'Amérique Centrale et du Mexique. Troisième Part - 1re Sec.* Imprimerie Nat., Paris.
- Duméril, M.C. and M.A. Duméril. 1851. *Catalogue méthodique de la collection des reptiles du Muséum d'Histoire Naturelle de Paris*. Gide and Baudry, Paris.
- Dunn, E.R. 1936. The amphibians and reptiles of the Mexican expedition of 1934. *Proc. Acad. Nat. Sci. Philadelphia* 88:471-477.
- Echegoyen, E.F. 2005. Reptiles y anfibios de Jalisco. *Univ. Guadalajara Publ.* (17):15 p. unum.
- Elter, O. 1982. La collezione erpetologica del Museo di Zoologia dell'Università di Torino. *Mus. Reg. Sci. Nat. Torino, Cat.* 5:1-116.
- Etheridge, R.E. 1964. The skeletal morphology and systematic relationships of sceloporine lizards. *Copeia* 1964:610-631.
- Ferguson, G.W. 1977. Social displays in reptiles, p. 405-554. In C. Gans and D.W. Tinkle (eds.), *Biology of the Reptilia*, Vol. 7, Ecology and Behaviour A. Academic Press, New York.
- Ferrari-Pérez, F. 1886. Catalogue of animals collected by the Geographical and Exploring Commission of the Republic of Mexico. *Proc. U.S. Natl. Mus.* 9:125-199.
- Fitch, H.S. 1978. Sexual size differences in the genus *Sceloporus*. *Univ. Kansas Sci. Bull.* 51:441-461.
- . 1981. Sexual size differences in reptiles. *Misc. Publ. Univ. Kansas Mus. Nat. Hist.* (70):1-72.
- . 1985. Variation in clutch and litter size in New World reptiles. *Misc. Publ. Univ. Kansas Mus. Nat. Hist.* (76):1-76.
- Fitzinger, L. 1843. *Systema Reptilium. Fasciculus Primus. Amblyglossae. Vindobonae, Braumüller et Seidel.*
- Flores Villela, O.A. 1991. Analisis de la Distribucion de la Herpetofauna de Mexico. Tesis Doctoral, Fac. Cienc. (Biol.), UNAM.
- . 1993. Herpetofauna Mexicana: annotated list of the species of amphibians and reptiles of Mexico, recent taxonomic changes, and new species. *Carnegie Mus. Nat. Hist. Spec. Publ.* (17):iv + 73 p.
- and P. Gérez F. 1988. Conservación en México: síntesis sobre vertebrados terrestres, vegetación y uso del suelo. Xalapa, Veracruz, Inst. Nac. Invest. Recursos Bióticos.
- and -. 1994. Biodiversidad y conservación en México: vertebrados, vegetación y uso del suelo. México, D.F., Com. Nac. para el Conoc. y Uso de la Biodiv. and UNAM.
- E. Hernández-G., and A. Nieto Montes de Oca. 1991. Catálogo de anfibios y reptiles del Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México. México, D.F., Fac. de Ciencias, UNAM.
- , F. Mendoza Quijano, and G. Gonzalez Porter (compl.). 1995. Recopilación de claves para la determinación de anfibios y reptiles de Mexico. *Publ. esp. Mus. Zool.* (10):iv + 285 p.
- Frank, N. and E. Ramus. 1995. A Complete Guide to Scientific and Common Names of Reptiles and Amphibians of the World. NG Publ., Inc., Pottsville, Pennsylvania.
- Gadow, H.F. 1905. The distribution of Mexican amphibians and reptiles. *Proc. Zool. Soc. Lond.* 1905: 191-245.
- . 1910. The effect of altitude upon the distribution of Mexican amphibians and reptiles. *Zool. Jb., Abt. Syst. Ökol. Geogr.* 29:689-714.
- Galindo y V., J. 1927. Geografía zoológica o zoogeografía, p. 177-241. In *Geografía de la República Mexicana. Tomo segundo. Geografía biológica y geografía humano.* Soc. Edic. Libr. Franco Americana, México, D.F.
- García, L. and A. Ortega. 1983. Estadio de mayor actividad espermatogénica de *Sceloporus scalaris* Wiegmann. *Res. Progr. VII Congr. Nac. Zool.*:121.
- García C., A. 1884. Cuadro geográfico estadístico, descriptivo y histórico de Los Estados Unidos Mexicanos. Secr. Fomento Mexico, D.F.
- Garman, S. 1887. Reptiles and batrachians from Texas and Mexico. *Bull. Essex Inst.* 19:119-138.
- Gilboa, I. 1975. Karyotypes of amphibians and reptiles: a bibliographic review, p. 91-165. In H.G. Dowling, 1974 Yearbook of Herpetology. H.I.S.S. V, New York.

- Godínez C., E. 1985. Ciclo reproductivo de *Sceloporus megalepidurus megalepidurus* Smith (Reptilia: Sauria: Iguanidae), en la parte oriental de Tlaxcala, México. Biol. Diss., Esc. Nac. Est. Prof. Iztacala, UNAM, Tlalnepan, México, México.
- González A., J.L. Camarillo, F. Mendoza, and M. Mancilla. 1986. Impact of expanding human populations on the herpetofauna of the Valley of Mexico. *Herpetol. Rev.* 17:30–31.
- , F. Mendoza Q., M. Mancilla M., and J.L. Camarillo R. 1985. Composición herpetofaunística de la cuenca del Valle de México. Mem. 8th Congr. Nac. Zool., Saltillo, Coahuila, México:783–786.
- Grant, C. and H.M. Smith. 1960. Herpetozoa from Jalisco, Mexico. *Herpetologica* 16:39–43.
- Grassé. J.-P. 1970. *Traité de Zoologie*. Tome XIV. Reptiles. Glandes endocrines-embryologie-système-maturation-paléontologie. Fasc. III. Masson, Paris.
- Gravenhorst, J.L.C. 1837. Beiträge zur genauern Kenntniss einiger Eidechsen-gattungen. *Acta Acad. Caesar Leop. Carol. Nat. Cur.* 18:711–784, pl. LIV–LVI.
- Gray, J.E. 1845. Catalogue of the specimens of lizards in the collection of the British Museum. Trustees of the British Museum (Nat. Hist.), London.
- Guillette, L.J., Jr. 1981. Reproductive strategies and the evolution of viviparity in two allopatric populations of the Mexican lizard, *Sceloporus aeneus*. Ph.D. Diss., Univ. Colorado, Boulder.
- , R.E. Jones, K.T. Fitzgerald, and H.M. Smith. 1980. Evolution of viviparity in the lizard genus *Sceloporus*. *Herpetologica* 36:201–215.
- and H.M. Smith. 1985. Cryptic species in the Mexican lizard complex, *Sceloporus aeneus*. *Bull. Maryland Herpetol. Soc.* 21:1–15.
- Günther, A.C.L.G. 1890. *Biología Centrali-Americana*. Reptilia and Batrachia. R.H. Porter, and Dulau and Co., London.
- Gutiérrez, A. and A. Ortega. 1986. Mating behaviour of the mountain lizard, *Sceloporus scalaris*. *Bull. Maryland Herpetol. Soc.* 22:23–25.
- Hall, W.P., III. 1971. Chromosomes, speciation, and evolution of Mexican iguanid lizards. *Natl. Geogr. Soc. Res. Rept.* 12:309–329.
- . 1973. Comparative population cytogenetics, speciation, and evolution of the iguanid lizard genus *Sceloporus*. Ph.D. Diss., Harvard Univ., Cambridge, Massachusetts.
- and E.E. Williams. 1976. Evolutionary role of Robertsonian change, p. 18–27. In D. Paull, E.E. Williams, and W.P. Hall (eds.), lizard karyotypes from the Galapagos Islands: chromosomes in phylogeny and evolution. *Breviora* (441).
- Hallowell, E. 1857[1856]. Note on the collection of reptiles from the neighborhood of San Antonio, Texas, recently presented to the Academy of Natural Sciences by Dr. A. Heermann. *Proc. Acad. Nat. Sci. Philadelphia* 8:306–310.
- . 1861[1860]. Report upon the Reptilia of the North Pacific Exploring Expedition, under command of Capt. John Rogers, U.S.N. *Proc. Acad. Nat. Sci. Philadelphia* 12:480–509.
- Harmon, L.J., J.A. Schulte, II, A. Larson, and J.B. Losos. 2003. Tempo and mode of evolutionary radiation in iguanian lizards. *Science* 301:961–964.
- Heatwole, H. and J. Taylor. 1987. *Ecology of Reptiles*. Chipping Norton, New South Wales, Surrey Beatty.
- Hernández, M.M. (Coord.). 2004a. Diagnóstico Ambiental de la Región III. Ecatepec. Sec. Ecol., Gobl. Est. México.
- . 2004b. Diagnóstico Ambiental de la Región IV. Cuautitlán Izcalli. Sec. Ecol., Gobl. Est. México.
- . 2004c. Diagnóstico Ambiental de la Región VII. Texcoco. Sec. Ecol., Gobl. Est. México.
- . 2004d. Diagnóstico Ambiental de la Región IX. Nezahualcóyotl. Sec. Ecol., Gobl. Est. México.
- Hernández G., J.A. and O.A. Flores V. 1985. Los anfibios y los reptiles, p. 33–36. In *Imagen de la Gran Capital*. Enciclopedia de México, México.
- Herrel, A., J.J. Meyers, and B. Vanhooydonck. 2002. Relations between microhabitat use and limb shape in phrynosomatid lizards. *Biol. J. Linn. Soc.* 77:149–163.
- Herrera, A.L. 1890. Notas acerca de los vertebrados del Valle de México. *Naturaleza* (2)1:299–342.
- . 1891a. El Valle de México considerado como provincia zoológica. *Naturaleza* (2)1:343–378, 442–483.
- . 1891b. El clima del Valle de México y la biología de los vertebrados. *Naturaleza* (2)2:38–86.
- . 1895. Catálogo de la colección de reptiles y batracios del Museo Nacional. Museo Nacional, México, D.F.
- . 1899. Sinonimia vulgar y científica de los principales vertebrados Mexicanos. Ofic. Tipog. Secr. Fomento., México.
- . 1904. Catálogo de la colección de reptiles y batracios del Museo Nacional. Segunda Edición. Mus. Nac., México, D.F.
- and D. Vergara L. 1899. La vie sur les hauts plateaux. Influence de la pression barométrique sur la constitution et le développement de entres organisés. *Traité climatérique de la tuberculose*. México, I. Escalante.
- Hirald, F., M. Delibes, and J. Bustamante. 1991. Overlap in the diets of diurnal raptors breeding at the Michilia Biosphere Reserve, Durango, Mexico. *J. Rapt. Res.* 25:25–29.
- Hutchins, M., J.B. Murphy, and N. Schlager (eds.). 2003. *Grzimek's Animal Life Encyclopedia*, second ed., Vol.7. Reptiles. Gale Group, Inc., Farmington Hills, Michigan.
- Ives, J.E. 1892 (1891). Reptiles and batrachians from northern Yucatán and México. *Proc. Acad. Nat. Sci. Philadelphia* 43:458–463.
- Jan, G. 1857. Cenni sul Museo Civico di Milano ed indice sistematico del rettili ed anfibii esposti nel medesimo. Milan.
- Köhler, G. and P. Heimes. 2002. *Stachelleguane: Lebensweise-Pflege-Zucht*. Herpeton, Offenbach, Germany.
- Lang, M. 1989. Phylogenetic and biogeographic patterns of basiliscine iguanians (Reptilia: Squamata: "Iguanidae"). *Bonn. Zool. Monogr.* (28):1–172.
- Lara Góngora, G. 1982. *Lagartijas D.F.: un análisis*

- sobre su distribución. Resúmenes VI Congr. Nac. Zool., Mazatlán:50.
- Larsen, K.R. and W.W. Tanner. 1974. Numeric analysis of the lizard genus *Sceloporus* with special reference to cranial osteology. *Great Basin Nat.* 34: 1-41.
- and —. 1975. Evolution of sceloporine lizards (Iguanidae). *Great Basin Nat.* 35:1-20.
- Lichtenstein, H. 1856. *Nomenclator reptilium et amphibiorum musei zoologici berlinensis*. Berlin.
- Liner, E.A. and J.R. Dixon. 1992. A new species of the *Sceloporus scalaris* group from Cerro Peña Nevada, Nuevo Leon, México (Sauria: Iguanidae). *Texas J. Sci.* 44:421-427.
- Maldonado Koerdell, M. 1953. Reptiles, p. 121-133. In E. Beltrán, Vida silvestre y recursos naturales a lo largo de la carretera panamericana. Inst. Mexicano de Recursos Naturales Renovables, México, D.F.
- Martín del Campo, R. 1940. Los vertebrados de Pátzcuaro. *An. Inst. Biol. Univ. Mex.* 11:417-513.
- Martin, P.S. 1958. A biogeography of reptiles and amphibians in the Gomez Farias region, Tamaulipas, Mexico. *Misc. Publ. Mus. Zool. Univ. Michigan* (101):1-102.
- Martins, E.P. 1993. A comparative study of the evolution of *Sceloporus* push-up displays. *Am. Nat.* 142:994-1018.
- Marx, H. 1958. Catalogue of type specimens of reptiles and amphibians in Chicago Natural History Museum. *Fieldiana Zool.* 36:409-496.
- , 1976. Supplementary catalogue of type specimens of reptiles and amphibians in Field Museum of Natural History. *Fieldiana Zool.* 69:33-94.
- McCranie, J.R. and L.D. Wilson. 1987. The biogeography of the herpetofauna of the pine-oak woodlands of the Sierra Madre Occidental of Mexico. *Milwaukee Pub. Mus. Contrib. Biol. Geol.* (72):1-30.
- and —. 1990. Annotated bibliography to the herpetofauna of the pine-oak woodlands of the Sierra Madre Occidental, Mexico. *Smithson. Herpetol. Info. Serv.* (84):1-16.
- and —. 2001. The herpetofauna of the Mexican state of Aguascalientes. *Cour. Forsch.-Inst. Senckenberg.* 230:1-57.
- Mendez-de la Cruz, F.R., J.L. Camarillo-R., M. Villagrán-Santa Cruz, and R. Aguilar-Cortez. 1992. Observaciones sobre el status de los anfibios y reptiles de la Sierra de Guadalupe (Distrito Federal-Estado de Mexico). *An. Inst. Biol. UNAM, Ser. Zool.* 63:249-256.
- and M. Villagrán S. 1983. Contribución al conocimiento de la ecología y ciclo reproductor de la lagartija *Sceloporus mucronatus mucronatus*. *Biol. Diss., Esc. Nac. Estud. Prof. Iztacala, Tlalnepantla, México.*
- , M. Villagrán-Santa Cruz, and R. Andrews. 1998. Evolution of viviparity in the lizard genus *Sceloporus*. *Herpetologica* 54:521-532.
- Mendoza Quijano, F. 1990. Estudio herpetofaunístico en el transecto Zacualtipan-Zoquicoquipan-San Juan Meztlán, Hidalgo. *Tesis Biol., Esc. Nac. Est. Prof. Iztacala, UNAM, Tlalnepantla, México, México.*
- , G. Alonso A., and M. Moreno M. 1989. Notas sobre algunos anfibios y reptiles del oeste de Tlalnepantla, Hidalgo. *Mem. 9th Coloquio de Investigación, Esc. Nac. Est. Prof. Iztacala:*1-17.
- Mink, D.G. and J.W. Sites, Jr. 1996. Species limits, phylogenetic relationships, and origins of viviparity in the *scalaris* complex of the lizard genus *Sceloporus* (Phrynosomatidae: Sauria). *Herpetologica* 52:551-571.
- Moody, S.M. 1983. The rectus abdominis muscle complex of the Lacertilia: terminology, homology, and assumed presence in primitive iguanian lizards, p. 195-212. In A.G.J. Rhodin and K. Miyata (eds.), *Advances in Herpetology and Evolutionary Biology. Essays in Honor of Ernest E. Williams*. Mus. Comp. Zool., Cambridge, Massachusetts.
- Morafka, D.J. 1977. A biogeographical analysis of the Chihuahuan Desert through its herpetofauna. *Biogeographica* vol. 9, Dr. W. Junk B.V., Publ., The Hague.
- Müller, F. 1878. Katalog der im Museum und Universitäts-kabinet zu Basel aufgestellten Amphibien und Reptilien nebst Anmerkungen. *Verh. Naturf. Ges. Basel* 6:559-709, pls. 1-2.
- , 1884. Dritter Nachtrag zum Katalog der herpetologischen Sammlung des Basler Museum. *Verh. Naturf. Ges. Basel* 7:274-299.
- Müller, J.W. 1865. Reisen in der Vereinigten Staaten, Canada und Mexiko. III. Beiträge zur Geschichte, Statistik und Zoologie von Mexiko. Dritte Abteilung. Die Wirbelthiere Mexikos. III. Amphibia. Brockhaus, Leipzig.
- Nilsson, G. 1983. The Endangered Species Handbook. Anim. Welfare Inst., Washington, D.C.
- Olson, R.E., B. Marx, and R. Rome. 1986. Descriptive dentition morphology of lizards of Middle and North America, I. Scincidae, Teiidae, and Helodermatidae. *Bull. Maryland Herpetol. Soc.* 22:97-124.
- , —, and —. 1987. Descriptive dentition morphology of lizards of Middle and North America II: Iguanidae. *Bull. Maryland Herpetol. Soc.* 23:12-34.
- Ortega, A. and R. Barbault. 1986. Reproduction in the high elevation Mexican lizard *Sceloporus scalaris*. *J. Herpetol.* 20:111-114.
- , —, G. Halffter, A. Castellanos, and F. Salinas. 1998. Growth effort of *Sceloporus scalaris* (Sauria: Phrynosomatidae) at La Michilia Biosphere Reserve, Mexico. *Rev. Biol. Trop.* 46:145-155.
- and P. Galina. 1987. Ciclos anuales de reservas de lípidos en lacertilios de montaña. *Progr. Res. 9th Congr. Nac. Zool., Villahermosa, Tabasco, México:*230.
- and A. Gutiérrez. 1987. Evaluación de diferentes métodos para estimar el área de campo de dos especies de iguanidos simpátricos. *Donaña Acta Vertebr.* 14:133-138.
- and L. Hernández. 1983. Abundancia relativa de insectos en un medio estacional; su influencia en la historia de vida de dos iguanidos simpátricos. *Folia Entomol. Mexicana* 55:129-144.

- , M. Khodadost, and R. Servin. 1996. Osseous growth marks in *Sceloporus scalaris*. *Wasmann J. Biol.* 51:55–63.
- , M.E. Maury, and R. Barbault. 1982. Spatial organization and habitat partitioning in a mountain lizard community in Mexico. *Acta Oecol. Oecol. Gén.* 3:323–330.
- , R. Rodríguez, P. Galina, and A. Gutiérrez. 1987. Seasonal variation in fat bodies of the montane lizard, *Sceloporus scalaris*. *Bull. Maryland Herpetol. Soc.* 23:39–46.
- , L. Hernández, et R. Barbault. 1984. Cycles journaliers d'activité chez deux espèces sympatriques de *Sceloporus* (Iguanidae), *S. grammicus* et *S. scalaris*. *Amphib.-Rept.* 5:347–354.
- Pelaez, D., R. Perez Reyes, and A. Barrera. 1948. Estudios sobre hematozoarios I. *Plasmodium mexicanum* Thompson y Huff, 1944, en sus huéspedes naturales. *An. Esc. Nac. Cienc. Biol., México* 5:197–215.
- Pérez V., G. and T. Reyna T. 1978. Regiones faunísticas y el medio geográfico del Valle de México. *Congr. Nac. Zool., México* 1:211–218.
- Peters, G. 1967. Klasse Reptilia - Kriechtiere, p. 355–508. In K. Deckert, *Urania Tierreich*. Band 4. Fische, Lurche, Kriechtiere. *Urania*, Leipzig.
- Peters, W.C.H. 1870 (1869). Über mexicanische Amphibien, welche Hr. Berkenbusch in Puebla auf Veranlassung des Hrn. Legationsrath von Schölzer dem zoologischen Museum zugesandt hat. *Mbr. Dt. Akad. Wiss. Berlin* 1869:874–881.
- . 1870. Ueber neue Amphibien des Königl. zoologischen Museums. *Mbr. Dt. Akad. Wiss. Berlin* 1870: 641–652.
- Petersen, M.K. 1980. Field observations on reptiles and amphibians captured in pit-fall traps in Durango, Mexico. *Southwest. Nat.* 25:115–117.
- Pilorge, T. and R. Barbault. 1981. La viviparité chez les lézards: évolution et adaptation. *Acta Oecol. Oecol. Gén.* 24:387–397.
- Poglayen, I. and H.M. Smith. 1958. Noteworthy herpetiles from Mexico. *Herpetologica* 14:11–15.
- Pough, F.H. 1973. Lizard energetics and diet. *Ecology* 54:837–844.
- Purdue, J.R. and C.C. Carpenter. 1972a. A comparative study of the display motion in the iguanid genera *Sceloporus*, *Uta*, and *Urosaurus*. *Herpetologica* 28:137–141.
- and -. 1972b. A comparative study of body movements of displaying males of the lizard genus *Sceloporus* (Iguanidae). *Behaviour* 41:68–81.
- Ramirez-Bautista, A., E. Godínez-Cano, and J.L. Camarillo. 1991. Some amphibians and reptiles from Cahuacan, Trans-Figuracion and Villa del Carbon, state of Mexico. With general comments on their ecology. *Bull. Maryland Herpetol. Soc.* 27: 171–188.
- , X. Hernandez-Ibarra, and R. Torres-Cervantes. 2000. Natural history notes. *Salvadora grahamae lineata* (Texas Patchnose Snake). *Diet. Herpetol. Rev.* 31:180.
- Reeder, T.W. 1995. Phylogenetic relationships among phrynosomatid lizards as inferred from mitochondrial ribosomal DNA sequences: substitutional bias and information content of transitions relative to transversions. *Mol. Phylo. Evol.* 4:203–222.
- and J.J. Wiens. 1996. Evolution of the lizard family Phrynosomatidae as inferred from diverse types of data. *Herpetol. Monogr.* (10):43–84.
- Rodriguez-Robles, J.A., D.A. Good, and D.B. Wake. 2003. Brief history of herpetology in the Museum of Vertebrate Zoology, University of California, Berkeley, with a list of type specimens of recent amphibians and reptiles. *Univ. California Publ. Zool.* 131:xv + 119 p.
- Shannon, F.A. 1951. Notes on a herpetological collection from Oaxaca and other localities in Mexico. *Proc. U.S. Natl. Mus.* 101:465–484.
- Shine, R. 1985. The evolution of viviparity in reptiles: an ecological analysis, p. 605–694. In C. Gans and F. Billett (eds.), *Biology of the Reptilia*, Vol. 15, Development B. John Wiley and Sons, New York.
- Sites, J.W., Jr., J.W. Archie, C.J. Cole, and O. Flores Villela. 1992. A review of phylogenetic hypotheses for lizards of the genus *Sceloporus* (Phrynosomatidae): implications for ecological and evolutionary studies. *Bull. Amer. Mus. Nat. Hist.* (213): 1–110.
- Smith, E.N. 2001. Species boundaries and evolutionary patterns of speciation among the malachite lizards (*formosus* group) of the genus *Sceloporus* (Squamata: Phrynosomatidae). Ph.D. Diss., Univ. Texas at Arlington.
- Smith, H.M. 1934a. On the taxonomic status of three species of lizards of the genus *Sceloporus* from Mexico and southern United States. *Proc. Biol. Soc. Washington* 47:121–133.
- . 1934b. Descriptions of new lizards of the genus *Sceloporus* from Mexico and southern United States. *Trans. Kansas Acad. Sci.* 37:263–285.
- . 1936. The lizards of the *torquatus* group of the genus *Sceloporus* Wiegmann, 1828. *Univ. Kansas Sci. Bull.* 24:539–693.
- . 1937. A synopsis of the *scalaris* group of the lizard genus *Sceloporus*. *Occ. Pap. Mus. Zool. Univ. Michigan* (361):1–8.
- . 1939. The Mexican and Central American lizards of the genus *Sceloporus*. *Zool. Ser. Field Mus. Nat. Hist.* (26):1–397.
- . 1971. The status of Wilhelm Deppe's herpetological names. *J. Herpetol.* 5:74–76.
- . 1974. The relationships of the members of the *scalaris* group of the lizard genus *Sceloporus*. *J. Colorado-Wyoming Acad. Sci.* 7:79.
- . 1975. Grist for the mills of herpetophiles in Mexico. *Bull. Maryland Herpetol. Soc.* 11:40–44.
- . 1985. Los anfibios y reptiles. Comisión Editora de las obras de Francisco Hernández. Francisco Hernández, *Obras Completas* 7:241–247.
- . 1987. Current nomenclature for the names and material cited in Günther's *Reptilia and Batrachia* volume of the *Biologia Centrali-Americana*, p. xxiii–li. In SSAR reprint of A.C.L.G. Günther, *Biologia Centrali-Americana, Reptilia and Batrachia*.

- , D. Duvall, B.M. Graves, R.E. Jones, and D. Chiszar. 1982. The function of squamate epidermatoglyphics. *Bull. Philadelphia Herpetol. Soc.* 30:3-8, 31:44-49.
- and W.P. Hall. 1974. Contributions to the concepts of reproductive cycles and the systematics of the *scalaris* group of the lizard genus *Sceloporus*. *Great Basin Nat.* 34:97-104.
- and L.E. Lafe. 1945. Mexican amphibians and reptiles in the Texas Cooperative Wildlife Collections. *Trans. Kansas Acad. Sci.* 48:325-354.
- , C. McCarthy, and D. Chiszar. 2000. Some enigmatic identifications in Boulenger's 1897 *Sceloporus* monograph (Reptilia: Sauria). *Bull. Maryland Herpetol. Soc.* 36:124-132.
- and R.B. Smith. 1975. The herpetological names of Herrera, 1899, and their status. *Trans. Kansas Acad. Sci.* 78:85-87.
- and -. 1976. Synopsis of the Herpetofauna of Mexico. Vol. III. Source Analysis and Index for Mexican Reptiles. John Johnson, North Bennington, Vermont.
- and -. 1993. Synopsis of the Herpetofauna of Mexico. Vol. VII. Bibliographic Addendum IV and Index, Bibliographic Addenda II-IV 1979-1991. Univ. Press of Colorado, Niwot, Colorado.
- and E.H. Taylor. 1950a. Type localities of Mexican reptiles and amphibians. *Univ. Kansas Sci. Bull.* 33:313-380.
- and -. 1950b. An annotated checklist and key to the reptiles of Mexico exclusive of the snakes. *Bull. U.S. Natl. Mus.* (199):v + 253 p.
- , G.J. Watkins-Colwell, J.A. Lemos-Espinal, and D. Chiszar. 1997. A new subspecies of the lizard *Sceloporus scalaris* (Reptilia: Sauria: Phrynosomatidae) from the Sierra Madre Occidental of Mexico. *Southwest. Nat.* 42:290-301.
- , E.A. Liner, and D. Chiszar. 1996. *Sceloporus scalaris* auctorum a superspecies (Reptilia: Sauria). *Bull. Maryland Herpetol. Soc.* 32:70-74.
- Sokolov, V.E. (ed.). 1988. Dictionary of Animal Names in Five Languages. Amphibians and Reptiles. Russky Yazyk Publ., Moscow.
- Stejneger, L.H. 1891. Notes on *Sceloporus variabilis* and its geographical distribution in the United States. *Proc. U.S. Natl. Mus.* 14:485-488.
- . 1904. A new lizard from the Rio Grande Valley, Texas. *Proc. Biol. Soc. Washington* 17:17-20.
- Sumichrast, F. 1873. Coup d'oeil sur la distribution géographique des reptiles au Mexique. *Archs. Sci. Phys. Nat.* 46:233-250.
- . 1882. Enumeración de las especies de reptiles observados en la parte meridional de la República Mexicana. *Naturaleza* 6:31-45.
- Taylor, E.H. 1944. Present location of certain herpetological and other types specimens. *Univ. Kansas Sci. Bull.* 30:11-18.
- . 1969. Wiegmann and the herpetology of Mexico. SSAR Facsimile Reprints in Herpetology (23) (A.F.A. Wiegmann, Herpetologia Mexicana):iii-vi.
- Thomas, R.A. and J.R. Dixon. 1976. A re-evaluation of the *Sceloporus scalaris* group (Sauria: Iguanidae). *Southwest. Nat.* 20:523-536.
- Thompson, P.E. and C.G. Huff. 1944. Saurian malarial parasites of the United States and Mexico. *J. Infect. Dis.* 74:68-79.
- Van Denburgh, J. 1922. The Reptiles of Western North America. Vol. I. Lizards. Occ. Pap. California Acad. Sci. (10):1-611.
- Velasco, A.L. 1890a. Geografía y estadística del estado de Veracruz-Llave. Reptiles and amphibians p. 69. Geografía y estadística de la República Mexicana. Vol. 3. México, D.F., Secr. Fomento.
- . 1890b. Geografía y estadística del estado de Guanajuato. Reptiles and amphibians, p. 53-55. Geografía y estadística de la República Mexicana. Vol. 5. México, D.F., Secr. Fomento.
- . 1890c. Geografía y estadística del estado de Michoacán de Ocampo. Reptiles and amphibians, p. 61-62. Geografía y estadística de la República Mexicana. Vol. 6. México, D.F., Secr. Fomento.
- . 1890d. Geografía y estadística del estado de Morelos. Reptiles and amphibians, p. 52. Geografía y estadística de la República Mexicana. Vol. 7. México, D.F., Secr. Fomento.
- . 1891a. Geografía y estadística del estado de Querétaro-Arteaga. Reptiles and amphibians, p. 51-52. Geografía y estadística de la República Mexicana. Vol. 8. México, D.F., Secr. Fomento.
- . 1891b. Geografía y estadística del Estado de Oaxaca de Juárez. Reptiles and amphibians, p. 77-78. Geografía y estadística de la República Mexicana. Vol. 9. México, D.F., Secr. Fomento.
- . 1892a. Geografía y estadística del estado de Guerrero. Reptiles and amphibians, p. 74-76. Geografía y estadística de la República Mexicana. Vol. 10. México, D.F., Secr. Fomento.
- . 1892b. Geografía y estadística del estado de Tlaxcala. Reptiles and amphibians, p. 40. Geografía y estadística de la República Mexicana. Vol. 11. México, D.F., Secr. Fomento.
- . 1893. Geografía y estadística del estado de Durango. Reptiles and amphibians, p. 63-64. Geografía y estadística de la República Mexicana. Vol. 13. México, D.F., Secr. Fomento.
- . 1894. Geografía y estadística del estado de de Zacatecas. Reptiles and amphibians, p. 39-40. Geografía y estadística de la República Mexicana. Vol. 15. México, D.F. Secr. Fomento.
- . 1895. Geografía y estadística del estado de Campeche. Reptiles and amphibians, p. 37-39. Geografía y estadística de la República Mexicana. Vol. 16. México, D.F., Secr. Fomento.
- . 1896a. Geografía y estadística del estado de Aguascalientes. Reptiles and amphibians, p. 30-31. Geografía y estadística de la República Mexicana. Vol. 17. México, D.F., Secr. Fomento.
- . 1896b. Geografía y estadística del estado de Colima. Reptiles and amphibians, p. 36-38. Geografía y estadística de la República Mexicana. Vol. 18. México, D.F., Secr. Fomento.
- . 1898. Geografía y estadística del estado de Chiapas. Reptiles and amphibians, p. 61-63. Geografía y estadística de la República Mexicana. Vol. 29. México, D.F., Secr. Fomento.
- Warheit, K.I., J.D. Forman, J.B. Losos, and D.B.

- Miles. 1999. Morphological diversification and adaptive radiation: a comparison of two diverse lizard clades. *Evolution* 53:1226–1234.
- Watkins-Colwell, G.J., H.M. Smith, and D. Chiszar. 1996. Geographic distribution: *Sceloporus scalaris scalaris* (Highlands Bunch Grass Lizard). *Herpetol. Rev.* 27:153.
- Webb, R.G. 1984. Herpetogeography in the Mazatlán-Durango region of the Sierra Madre Occidental, Mexico, p. 217–241. In R.A. Seigel, L.E. Hunt, J.L. Knight, L. Malaret, and N.L. Zuschlag (eds.), *Vertebrate Ecology and Systematics: A Tribute to Henry S. Fitch*. Univ. Kansas Mus. Nat. Hist. (10).
- Westphal-C., A. 1872. Catalogue de la collection de reptiles de feu M. Alexandre Westphal-Castelnau. C.R. Congr. Sci. France, Montpellier 35:273–327.
- Wiegmann, A.F.A. 1828. Beiträge zur Amphibienkunde. *Isis von Oken* 21:364–383.
- . 1834. *Herpetologica mexicana seu descriptio amphibiorum Novae Hispaniae. Pars Prima. Sauro- rum species*. Lüderitz, Berlin.
- Wiens, J.J. 1993. Phylogenetic relationships of phrynosomatid lizards and monophyly of the *Sceloporus* group. *Copeia* 1993:287–299.
- . 1999. Phylogenetic evidence for multiple losses of a sexually selected character in phrynosomatid lizards. *Proc. R. Soc. Lond. B* 266:1529–1535.
- . 2000. Decoupled evolution of display morphology and display behaviour in phrynosomatid lizards. *Biol. J. Linn. Soc.* 70:597–612.
- and T.W. Reeder. 1997. Phylogeny of the spiny lizards (*Sceloporus*) based on molecular and morphological evidence. *Herpetol. Monogr.* (11):1–101.
- Wilson, L.D. and J.R. McCranie. 1979. Notes on the herpetofauna of two mountain ranges in Mexico (Sierra Fría, Aguascalientes, and Sierra Morones, Zacatecas). *J. Herpetol.* 13:271–278.
- Yarrow, H.C. 1882. Check list of North American Reptilia and Batrachia, with catalogue of specimens in U.S. National Museum. *Bull. U.S. Natl. Mus.* (24): vi + 249 p.

Gregory J. Watkins-Colwell, Yale Peabody Museum of Natural History, 170 Whitney Avenue, New Haven, Connecticut 06520-8118 (gregory.watkins-colwell@yale.edu); **Hobart M. Smith**, Department of EPO Biology, University of Colorado, Boulder, Colorado 80309-0334 (hsmith@colorado.edu); and **David Chiszar**, Department of Psychology, University of Colorado, Boulder, Colorado 80309-0345 (david.chiszar@colorado.edu)

Primary editor for this account, Andrew H. Price.

Published 15 February 2006 and Copyright © 2006 by the Society for the Study of Amphibians and Reptiles.
